

**Amendments to the Specification:**

Please add the following new paragraph after the title and before the first paragraph of page 1:

This application is a Continuation application of U.S. Patent Application Serial No. 10/081,944, filed February 20, 2002, which is a Divisional application of U.S. Patent Application Serial No. 09/713,183, filed November 15, 2000, which is a Continuation application of U.S. Patent Application Serial No. 09/441,281, filed November 16, 1999, which is now U.S. Patent No. 6,285,763, issued September 4, 2001, which is a Continuation of U.S. Patent Application Serial No. 08/649,411, filed May 16, 1996, which is now U.S. Patent No. 6,052,465 issued on April 18, 2000.

Please replace the paragraph, beginning at page 2, line 20, with the following rewritten paragraph:

~~The first~~ One aspect of the invention is an optical disk on which data is recorded with CLV, wherein, in a prescribed region of a pre-pit signal area on said disk, all or part of a barcode is written in overwriting fashion by selectively removing a reflective film in said prescribed region.

Please replace the paragraph, beginning at page 3, line 1, with the following rewritten paragraph:

~~The second~~ Another aspect of the invention is an optical disk ~~according to the first invention~~, wherein a control data area is provided for holding therein physical feature information concerning said optical disk, and an identifier for indicating the presence or absence of said barcode is recorded in said control data area.

Please replace the paragraph, beginning at page 3, line 6, with the following rewritten paragraph:

~~The third~~ Still another aspect of the invention is an optical disk ~~according to the second invention~~, wherein a guard-band area where no data is recorded is provided between said control data area and said prescribed region of said pre-pit signal area.

Please replace the paragraph, beginning at page 3, line 10, with the following rewritten paragraph:

~~The 4th-~~ Yet another aspect of the invention is an optical disk ~~according to the first invention~~, wherein said barcode is formed in such a manner that two or more barcode signals cannot occur within one prescribed time slot.

Please replace the paragraph, beginning at page 3, line 13, with the following rewritten paragraph:

~~The 5th-~~ Still yet another aspect of the invention is an optical disk ~~according to the first invention~~, wherein said barcode contains data at least including ID information uniquely given to said optical disk.

Please replace the paragraph, beginning at page 3, line 16, with the following rewritten paragraph:

~~The 6th-~~ A further aspect of the invention is an optical disk ~~according to the 5th invention~~, wherein said barcode contains data including, in addition to said ID information, a public key of a public key encryption function corresponding to said ID information, said public key being used when encrypting prescribed data for transmission to an external party in order to obtain from said external party a password required to reproduce said optical disk.

Please replace the paragraph, beginning at page 3, line 24, with the following rewritten paragraph:

~~The 7th-~~ A still further aspect of the invention is an optical disk ~~according to the 5th invention~~, wherein said ID information is encrypted or applied a digital signature to.

Please replace the paragraph, beginning at page 4, line 2, with the following rewritten paragraph:

~~The 8th~~ A yet further aspect of the invention is an optical disk ~~according to the 7th invention~~, wherein a secret key of a public key encryption function is used when applying encryption or a digital signature to said ID information.

Please replace the paragraph, beginning at page 4, line 6, with the following rewritten paragraph:

~~The 9th~~ A still yet further aspect of the invention is an optical disk ~~according to any one of inventions from first to 8th~~, wherein said optical disk is constructed from two disk-substrates laminated together.

Please replace the paragraph, beginning at page 4, line 9, with the following rewritten paragraph:

~~The 10th~~ One aspect of the invention is an optical disk barcode forming method wherein pulsed laser light from a light source is made into a rectangular beam pattern by using a rectangular mask and said rectangular beam pattern is focused on a reflective film in a pre-pit signal region in a prescribed radius portion of an optical disk on which data is recorded, and at the same time, said optical disk is rotated, thereby forming a plurality of rectangular reflective-film-removed regions as a barcode in the same radius portion on said reflective film.

Please replace the paragraph, beginning at page 4, line 18, with the following rewritten paragraph:

~~The 11th~~ Another aspect of the invention is an optical disk barcode forming method ~~according to the 10th invention~~, wherein said optical disk includes a control data area for holding therein physical feature information concerning said optical disk, and an identifier for indicating the presence or absence of said barcode is recorded in said control data area.

Please replace the paragraph, beginning at page 4, line 24, with the following rewritten paragraph:

~~The 12th~~ Still another aspect of the invention is an optical disk barcode forming method ~~according to the 11th invention~~, wherein said barcode is formed in such a manner that two or more barcode signals cannot occur within one prescribed time slot.

Please replace the paragraph, beginning at page 5, line 3, with the following rewritten paragraph:

The 13th Yet another aspect of the invention is an optical disk barcode forming method ~~according to any one of inventions from 10th to 12th~~, wherein said optical disk is constructed from two disk-substrates laminated together.

Please replace the paragraph, beginning at page 5, line 6, with the following rewritten paragraph:

~~The 14th~~ Still yet another aspect of the invention is an optical disk reproduction apparatus wherein recorded contents of a main data recording area, recorded by forming pits on an optical disk, are reproduced by using a rotational phase control for a motor, while recorded contents of a different recording area than said main data recording area, recorded by selectively forming low-reflectivity portions on a reflective film in said different recording area, are reproduced by using rotational speed control for said motor, and

Please replace the paragraph, beginning at page 5, line 17, with the following rewritten paragraph:

~~The 15th~~ A further aspect of the invention is an optical disk reproduction apparatus ~~according to the 14th invention~~, wherein tracking control is not performed in said different recording area.

Please replace the paragraph, beginning at page 5, line 20, with the following rewritten paragraph:

~~The 16th~~ A still further aspect of the invention is an optical disk reproduction apparatus ~~according to the 14th invention~~, wherein tracking control is, in effect, performed in said different recording area.

Please replace the paragraph, beginning at page 5, line 23, with the following rewritten paragraph:

~~The 17th~~ A yet further aspect of the invention is an optical disk reproduction apparatus ~~according to the 16th invention~~, wherein said ~~a~~ rotational speed is the rotational speed that would be achieved in said different recording area is said rotational phase control were applied.

Please replace the paragraph, beginning at page 6, line 2, with the following rewritten paragraph:

~~The 18th~~ A still further aspect of the invention is an optical disk reproduction apparatus ~~according to the 14th invention~~, wherein the rotational speed of said motor in aid rotational speed control is maintained at a prescribed value based on a result obtained by measuring a minimum-length pit in said different recording area.

Please replace the paragraph, beginning at page 6, line 7, with the following rewritten paragraph:

~~The 19th~~ A yet further aspect of the invention is an optical disk reproduction apparatus ~~according to the 14th invention~~, wherein said low-reflectivity portions are a barcode formed by selectively removing said reflective film.

Please replace the paragraph, beginning at page 6, line 11, with the following rewritten paragraph:

~~The 20th~~ A still yet further aspect of the invention is an optical disk reproduction apparatus ~~according to the 14th invention~~ wherein

Please replace the paragraph, beginning at page 6, line 19, with the following rewritten paragraph:

~~The 21st~~ One aspect of the invention is an optical disk reproduction apparatus ~~according to the 14th invention~~, wherein

Please replace the paragraph, beginning at page 7, line 1, with the following rewritten paragraph:

~~The 22nd~~ Another aspect of the invention is an optical disk reproduction apparatus according to ~~any one of inventions from 14th to 21st~~, wherein said optical disk is constructed from two disk-substrates laminated together.

Please replace the paragraph, beginning at page 7, line 4, with the following rewritten paragraph:

~~The 23rd~~ Still another aspect of the invention is an optical disk reproduction apparatus ~~according to the 14th invention~~, wherein said optical disk includes a control data area for holding therein physical feature information concerning said optical disk, and an identifier for indicating the presence or absence of said barcode is recorded in said control data area.

Please replace the paragraph, beginning at page 7, line 10, with the following rewritten paragraph:

~~The 24th~~ Yet another aspect of the invention is an optical disk reproduction apparatus ~~according to claim 23~~, wherein, after reading recorded contents of said control data area and judging the presence or absence of said barcode, it is determined whether an optical pickup should be moved to an inner portion or an outer portion of said optical disk.

Please replace the paragraph, beginning at page 7, line 16, with the following rewritten paragraph: :

~~The 25th~~ Still yet another aspect of the invention is a marking forming apparatus which comprises:

Please replace the paragraph, beginning at page 8, line 6, with the following rewritten paragraph:

~~The 26th—A further aspect of the invention~~ is a marking forming apparatus according to the 25th invention, wherein said disk is constructed from two disk-substrates laminated together.

Please replace the paragraph, beginning at page 8, line 9, with the following rewritten paragraph:

~~The 27th—A still further aspect of the invention~~ is a marking forming means according to the 25th invention, wherein said position information writing means includes encrypting means for encrypting at least said detected position information or information concerning said position information, and writes contents thus encrypted to said disk.

Please replace the paragraph, beginning at page 8, line 15, with the following rewritten paragraph:

~~The 28th—A yet further aspect of the invention~~ is a marking forming apparatus according to the 25th invention, wherein said position information writing means includes digital signature means for applying a digital signature to at least said detected position information or information concerning said position information.

Please replace the paragraph, beginning at page 8, line 24, with the following rewritten paragraph:

~~The 29th—A still yet further aspect of the invention~~ is a reproduction apparatus which comprises:

Please replace the paragraph, beginning at page 9, line 20, with the following rewritten paragraph:

~~The 30th—One aspect of the invention~~ is a reproduction apparatus according to the 29th invention, wherein at least said detected position information or information concerning said position information is written to said disk by position information writing means.

Please replace the paragraph, beginning at page 9, line 24, with the following rewritten paragraph:

~~The 31st~~ Another aspect of the invention is a reproduction apparatus ~~according to the 30th invention~~, wherein

Please replace the paragraph, beginning at page 10, line 9, with the following rewritten paragraph:

~~The 32nd~~ Still another aspect of the invention is a reproduction apparatus ~~according to the 30th invention~~, wherein:

Please replace the paragraph, beginning at page 11, line 8, with the following rewritten paragraph:

~~The 33rd~~ Yet another aspect of the invention is a method of manufacturing a disk, which comprises the steps of:

Please replace the paragraph, beginning at page 11, line 23, with the following rewritten paragraph:

~~The 34th~~ Still yet another aspect of the invention is a method of manufacturing a disk, which comprises the steps of:

Please replace the paragraph, beginning at page 12, line 13, with the following rewritten paragraph:

~~The 35th~~ A further aspect of the invention is a disk wherein a marking is formed by a laser to reflective film of said disk holding data written thereon, at least position information of said marking or information concerning said position information is encrypted or applied a digital signature, at least said encrypted information or digital signature-appended information is converted into a barcode, and said barcode is written by selectively removing said reflective film on said disk on which data is recorded with CLV, all or part of said barcode being written in overwriting fashion to a prescribed region of a pre-pit signal area on said disk.



Please replace the paragraph, beginning at page 79, line 25, with the following rewritten paragraph:

As shown in Figure 33(b) and Figure 4914(a), for example, in the data structure when  $n=1$ , there are only four data rows 951a, 951b, 951c, and 951d, followed by ECC rows 952a, 952b, 952c, and 952d. Figure 4914(a) is a diagram showing Figure 33(b) in further detail. The data row 951 constitutes EDC of 4B. Figure 4914(b) shows this in an equivalent form. Error-correction encoding computation is performed, assuming that data rows from 951e to 951z all contain 0s. Mathematical equations for EDC and ECC computations are shown in Figures 4914(c) and 4914(d), respectively. In this way, the data is ECC-encoded by the ECC encoder 927 in the recording apparatus of Figure 1 and recorded as a barcode on the disk. When  $n=1$ , data of 12B is recorded over an angle of 51 degrees on the disk. Likewise, when  $n=2$ , data of 18B can be recorded; when  $n=12$ , data of 271B can be recorded over an angle of 336 degrees on the disk. In the present invention, by encoding and decoding the data using the EDC and ECC computation equations shown in Figures 4914(c) and 4914(d), when the data amount is smaller than 188B, the computation is performed assuming all remaining bits are 0s, so that the data is stored with a small recording capacity. This serves to shorten the productive tact. When performing laser trimming, as in the present invention, the above-described scalability has a significant meaning. More specifically, when performing laser trimming at a factory, it is important to shorten the productive tact. With a slow-speed apparatus which trims one stripe at a time, it will take more than 10 seconds to record a few thousand stripes to the full capacity. The time required for disk production is 4 seconds per disk; if full-capacity recording has to be done, the productive tact increases. On the other hand, for the moment, disk ID number will be a main application area of the present invention; in this application, the PCA area capacity can be as low as 10B. If 271B are recorded when only 10B need to be written, the laser processing time will increase by a factor of 6, leading to a production cost increase. The scalability method of the present invention achieves reductions in production costs and time.

Please replace the paragraph, beginning at page 81, line 14, with the following rewritten paragraph:

In the playback apparatus shown in Figure 15, when  $n=1$  as in Figure 33(b), for example, the ECC decoder 928 performs the EDC and ECC error correction computations shown in Figures 4914(c) and 4914(d), assuming that the data rows 951e to 951z all contain 0s; the effect of this is that data of 12 to 271B can be corrected for errors by using the same program. In this case, the number of program steps decreases, permitting the use of a small-capacity ROM in the microcomputer.